

## APPENDIX A

PENDING CLAIMS AS OF JUNE 2, 2000

ARCD:177 (SN 08/455,683)

47. A process of screening a substance for its ability to interact with an opioid receptor, said process comprising the steps of:

- a) expressing a recombinant opioid receptor polypeptide encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:1 or SEQ ID NO:11 and selected from the group consisting of: (1) chimeric opioid receptors, (2) recombinant opioid receptor polypeptides encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:1 and (3) recombinant opioid receptor polypeptides encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:11;
- b) contacting said substance with the opioid receptor polypeptide; and
- c) detecting the ability of said substance to interact with said opioid receptor polypeptide.

48. The process according to claim 47, wherein said opioid receptor polypeptide is a chimeric opioid receptor polypeptide.

49. The process of claim 48, wherein one polypeptide of the chimeric opioid receptor polypeptide comprises the second extracellular loop of kappa opioid receptor.

50. The process of claim 48, wherein one polypeptide of the chimeric opioid receptor polypeptide comprises the third extracellular loop of kappa opioid receptor.

51. The process of claim 48, wherein the chimeric opioid receptor polypeptide comprises polypeptide portions of both kappa and delta opioid receptors.



52. The process according to claim 48, wherein said chimeric opioid receptor polypeptide is designated as  $\kappa_{1-78}/\delta_{70-372}$  or  $\delta_{1-69}/\kappa_{79-380}$ .

53-58. [Withdrawn as to non-elected invention]

59. A process of isolating a substance with an ability to act as a agonist of a kappa opioid receptor, said process comprising the steps of:

- a) providing an opioid receptor polypeptide encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:1 or SEQ ID NO:11 and selected from the group consisting of: (1) chimeric opioid receptors, (2) recombinant opioid receptor polypeptides encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:1 and (3) recombinant opioid receptor polypeptides encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:11;
- b) contacting said opioid receptor polypeptide with a composition comprising said substance;
- c) detecting the ability of said substance to interact as an agonist with said opioid receptor polypeptide; and
- d) isolating said substance if the ability of said substance to interact with the opioid receptor polypeptide is detected.

60-62. [Withdrawn as to non-elected invention]

63. The process of claim 59, wherein the opioid receptor polypeptide is a chimeric opioid receptor polypeptide.

64. The process of claim 63, wherein one polypeptide of the chimeric opioid receptor polypeptide comprises the second extracellular loop of kappa opioid receptor.

65. The process of claim 63, wherein one polypeptide of the chimeric opioid receptor polypeptide comprises the third extracellular loop of delta opioid receptor.

66. The process of claim 63, wherein the opioid receptor polypeptide comprises portions of both kappa and delta opioid receptors.

67. The process of claim 63, wherein said chimeric polypeptide is designated as  $\kappa_{1-78}/\delta_{70-372}$  or  $\delta_{1-69}/\kappa_{79-380}$ .

68-80. [Withdrawn as to non-elected invention]

81. The process according to claim 47, wherein said opioid receptor polypeptide is a kappa opioid receptor polypeptide having the sequence of SEQ ID NO:2 or SEQ ID NO:12.

82. The process of claim 81, wherein said opioid receptor polypeptide is a kappa opioid receptor polypeptide encoded for by the polynucleotide of SEQ ID NO: 1.

83. The process of claim 81, wherein said opioid receptor polypeptide is a kappa opioid receptor polypeptide encoded for by the polynucleotide of SEQ ID NO: 11.

84. A process of screening a substance for its ability to interact with an opioid receptor, said process comprising the steps of:

- a) expressing a recombinant opioid receptor polypeptide encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:1 or SEQ ID NO:11;
- b) contacting said substance with the opioid receptor polypeptide; and
- c) detecting the ability of said substance to interact with said opioid receptor polypeptide.

85. The process of claim 84, wherein said nucleic acid sequence comprises at least 40 contiguous bases of SEQ ID NO:1.

86. The process of claim 84, wherein said nucleic acid sequence comprises at least 40 contiguous bases of SEQ ID NO:11.

87. The process of claim 84, wherein said nucleic acid sequence comprises at least 55 contiguous bases of SEQ ID NO:1.

88. The process of claim 84, wherein said nucleic acid sequence comprises at least 55 contiguous bases of SEQ ID NO:11.

89. The process of claim 84, wherein said nucleic acid sequence comprises at least 70 contiguous bases of SEQ ID NO:1.

90. The process of claim 84, wherein said nucleic acid sequence comprises at least 70 contiguous bases of SEQ ID NO:11.

91. A process of screening a substance for its ability to interact with an opioid receptor, said process comprising the steps of:

- a) expressing a recombinant opioid receptor polypeptide encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:1;
- b) contacting said substance with the opioid receptor polypeptide; and
- c) detecting the ability of said substance to interact with said opioid receptor polypeptide.

92. The process of claim 91, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 40 contiguous bases of SEQ ID NO:1.

93. The process of claim 92, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 50 contiguous bases of SEQ ID NO:1.
94. The process of claim 93, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 75 contiguous bases of SEQ ID NO:1.
95. The process of claim 94, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 100 contiguous bases of SEQ ID NO:1.
96. The process of claim 95, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 680 contiguous bases of SEQ ID NO:1.
97. A process of screening a substance for its ability to interact with an opioid receptor, said process comprising the steps of:
- a) expressing a recombinant opioid receptor polypeptide encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:11;
  - b) contacting said substance with the opioid receptor polypeptide; and
  - c) detecting the ability of said substance to interact with said opioid receptor polypeptide.
98. The process of claim 97, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 40 contiguous bases of SEQ ID NO:11.
99. The process of claim 98, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 50 contiguous bases of SEQ ID NO:11.
100. The process of claim 99, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 75 contiguous bases of SEQ ID NO:11.

101. The process of claim 100, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 100 contiguous bases of SEQ ID NO:11.

102. The process of claim 101, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 680 contiguous bases of SEQ ID NO:11.

103. A process of isolating a substance with an ability to act as a specific agonist of a kappa opioid receptor, said process comprising the steps of:

- a) providing an opioid receptor polypeptide encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:1;
- b) contacting said opioid receptor polypeptide with a composition comprising said substance;
- c) detecting the ability of said substance to interact as an agonist with said opioid receptor; and
- d) isolating said substance if the ability of said substance to specifically interact with the opioid receptor is detected.

104. The process of claim 103, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 40 contiguous bases of SEQ ID NO:1.

105. The process of claim 104, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 50 contiguous bases of SEQ ID NO:1.

106. The process of claim 105, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 75 contiguous bases of SEQ ID NO:1.

107. The process of claim 106, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 100 contiguous bases of SEQ ID NO:1.

108. The process of claim 107, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 680 contiguous bases of SEQ ID NO:1.

109. A process of isolating a substance with an ability to act as a specific agonist of a kappa opioid receptor, said process comprising the steps of:

- a) providing an opioid receptor polypeptide encoded for by a nucleic acid sequence comprising at least 30 contiguous bases of SEQ ID NO:11;
- b) contacting said opioid receptor polypeptide with a composition comprising said substance;
- c) detecting the ability of said substance to interact as an agonist with said opioid receptor polypeptide; and
- d) isolating said substance if the ability of said substance to interact with the opioid receptor polypeptide is detected.

110. The process of claim 109, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 40 contiguous bases of SEQ ID NO:11.

111. The process of claim 110, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 50 contiguous bases of SEQ ID NO:11.

112. The process of claim 111, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 75 contiguous bases of SEQ ID NO:11.

113. The process of claim 112, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at least 100 contiguous bases of SEQ ID NO:11.

114. The process of claim 113, wherein said opioid receptor polypeptide is encoded for by a nucleic acid sequence comprising at l